



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,744	11/15/2001	Jack M. Birnbaum	D02288	7576
43471 7590 01/11/2007 GENERAL INSTRUMENT CORPORATION DBA THE CONNECTED HOME SOLUTIONS BUSINESS OF MOTOROLA, INC. 101 TOURNAMENT DRIVE HORSHAM, PA 19044			EXAMINER PRICE, NATHAN E	
			ART UNIT 2194	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/980,744

Applicant(s)

BIRNBAUM ET AL.

Examiner

Nathan Price

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
SUPERVISORY CENTER 2100

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to communications received 03 October 2006. Claims 1 – 30 are pending. Previous objections and rejections not included in this Office Action have been withdrawn.

Response to Arguments

2. Applicant's arguments with respect to claims 1 – 30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrift (Thrift, Philip and Todd Killian "JTV – Java-enabled Television.") in view of Itoh (Itoh et al., "A New Software Architecture for Evolvable Multimedia Software.").
4. As to claim 1, Thrift teaches an apparatus for providing a software architecture for implementing a television subscriber terminal, comprising:

a computer readable medium having computer program code means
[computer readable medium is inherent to the teachings of Thrift]; and

means for executing said computer program code means to implement a
layered software architecture including [execution of program code is inherent to
the teachings of Thrift]:

a first layer supporting hardware of the terminal [section 2, first full
paragraph lines 1 – 2];

a second layer comprising at least one device driver [section 2, first full
paragraph lines 1 – 2];

a third layer comprising an interface for the at least one device driver
[section 2, first full paragraph lines 1 – 2; RTOS; See Figure 1 of Itoh for further
explanation of the operating system];

a fourth layer comprising core system software for providing television
functions [section 2, first full paragraph; runtime environment; see Figure 1 of Itoh
for further explanation of the runtime environment];

said fourth layer also including a kernel abstraction function, which
together with said third layer, enables said core system software to operate in
different operating environments [section 2, first full paragraph lines 3 – 4; JVM];

a fifth layer for middleware porting [Figure 2 and section 3 ¶ 1; JMF and
JTV Player];

an operating system kernel [section 2, first full paragraph lines 1 – 2]; and

a sixth layer providing middleware to interface with at least one application [Figure 2; section 3 ¶ 1 and list; JTV Player and API].

5. Thrift fails to specifically teach the operating system at the fourth and fifth layers. However, Itoh teaches an operating system kernel at said fourth and fifth layers [Figure 1]. It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to combine these teachings because both teach using virtual machines to provide multimedia systems in set top boxes.

6. As to claim 2, Thrift teaches an operating environment comprises said middleware, middleware porting [section 3 ¶ 1; section 5 ¶ 1] and operating system kernel [section 2, first full paragraph lines 1 – 2].

7. As to claim 3, Thrift teaches an operating environment comprises said middleware, middleware porting [section 3 ¶ 1; section 5 ¶ 1], operating system kernel and device driver [section 2, first full paragraph lines 1 – 2].

8. As to claim 4, Thrift teaches an operating environment comprises said middleware, middleware porting [section 3 ¶ 1; section 5 ¶ 1], operating system kernel, device driver [section 2, first full paragraph lines 1 – 2] and application program [section 3 and section 5 ¶ 1].

Art Unit: 2194

9. As to claim 5, Thrift teaches the television subscriber terminal receives television signals via a broadband communication network [section 3 ¶ 1].

10. As to claim 6, Thrift teaches the TV functions include at least return path communication [section 2, "backchannel data transfer" (6th item in list)].

11. As to claim 7, Thrift teaches the TV functions include conditional access services including at least resource authorization [section 5 last paragraph].

12. As to claim 8, Thrift teaches the kernel abstraction function provides kernel calls and kernel-specific translations for the operating system kernel [section 2, first full paragraph lines 1 – 2].

13. As to claim 9, Thrift teaches the kernel abstraction function isolates the core system software from portions of the operating system kernel that are specific to an operating system [section 2, first full paragraph lines 1 – 2].

14. As to claim 10, Thrift teaches the interfaces for the at least one device driver isolates the core system software from portions of the device driver that are specific to an operating environment [section 2, first full paragraph lines 1 – 2].

Art Unit: 2194

15. As to claim 11, Thrift teaches the operating system kernel provides multi-threading, real-time operating system support needed to operate the terminal [section 2, first full paragraph lines 1 – 2].

16. As to claim 12, Thrift teaches the operating system kernel provides facilities for the terminal that are specific to an operating environment, including at least memory management [section 2, first full paragraph lines 1 – 2, it is inherent that such an RTOS would provide some form of memory management].

17. As to claim 13, Thrift modified by Itoh teaches the architecture further includes a software interface between the core system software and the fifth layer that enables said core system software to operate in the different operating environments [The JVM interfaces the runtime environment with the operating system and Itoh teaches the operating system is also present at the fifth layer. Furthermore, while the runtime environment provides the television features, it must interface with the higher software layers that are executed as part of the television system. See also, Thrift section 5 ¶ 1].

18. As to claim 14, Thrift teaches the software interface isolates the core system software from portions of the middleware and middleware porting that are specific to an operating environment [section 5 ¶ 1].

Art Unit: 2194

19. As to claim 15, Thrift teaches the software interface isolates the core system software from portions of the application program that are specific to an operating environment [section 5 ¶ 1].

20. As to claims 16 – 30, see the rejections of claims 1 – 15.

Conclusion

21. The prior art made of record on the P.T.O. 892 that has not been relied upon is considered pertinent to applicant's disclosure. Careful consideration of the cited art is required prior to responding to this Office Action, see 37 C.F.R. 1.111(c).

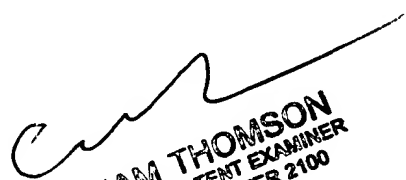
22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Price whose telephone number is (571) 272-4196. The examiner can normally be reached on 6:30am - 3:00pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2194

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NP


WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100